

Blakely, Sokoloff, Taylor & Zafman LLP
Title: Biological Identification System With Integrated Sensor Chip
1st Named Inventor: Jen-Jr Vincent Gau
Application No.: 09/848,727 Do
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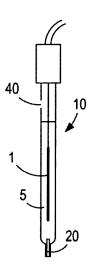


Figure 1

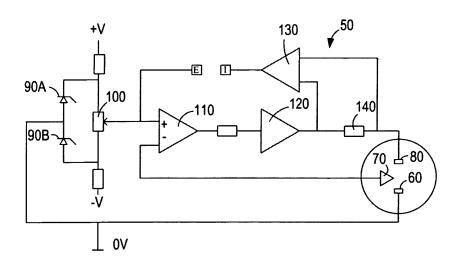


Figure 2

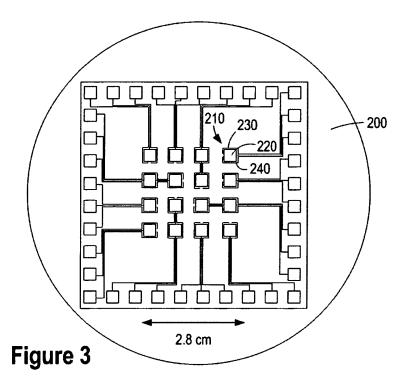




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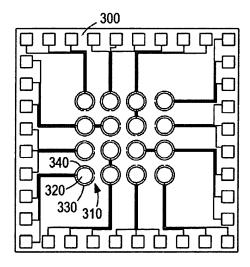


Figure 4



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Figure 5

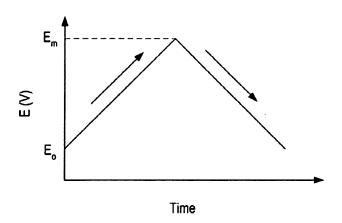


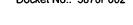
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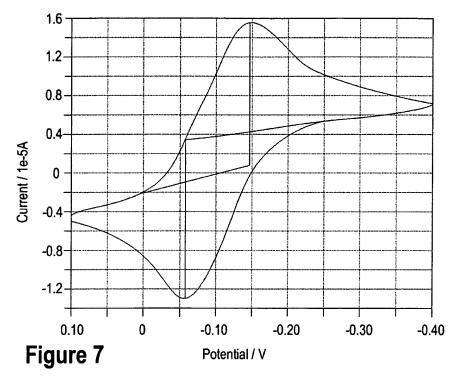


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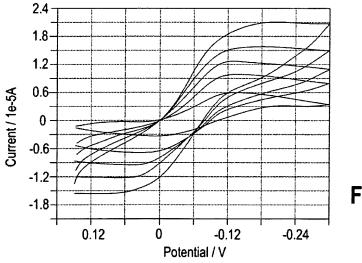


Figure 8



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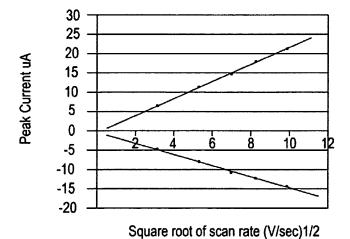


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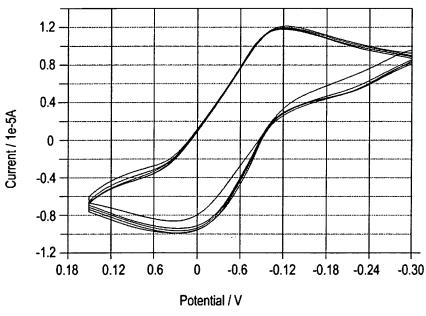


Figure 10





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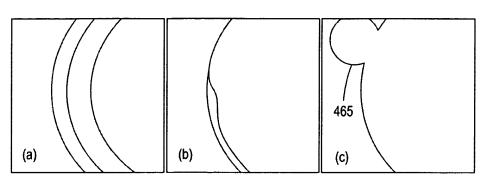


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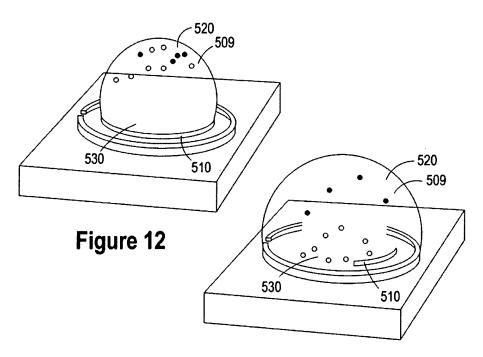


Figure 13





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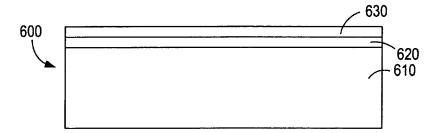


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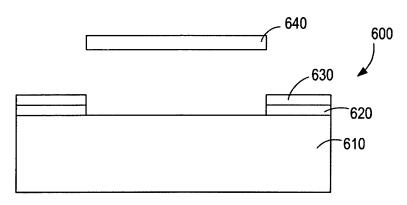


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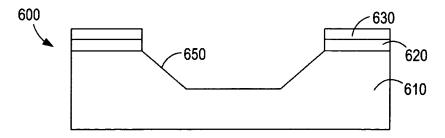


Figure 16



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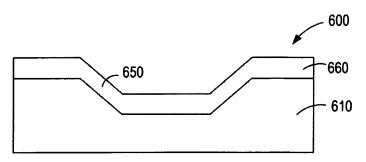


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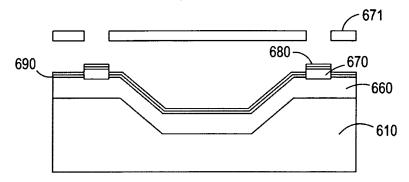


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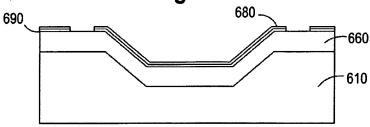


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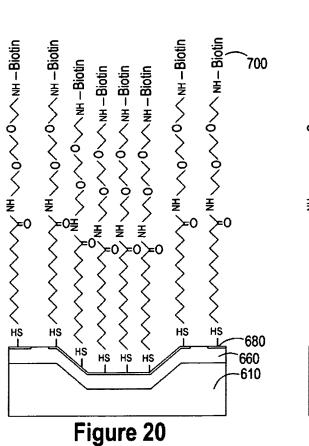
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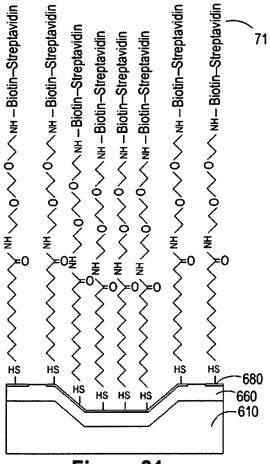


Figure 21



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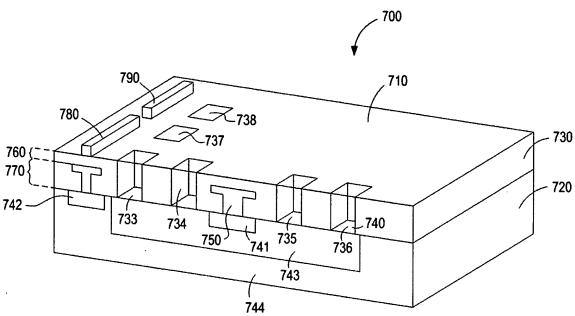


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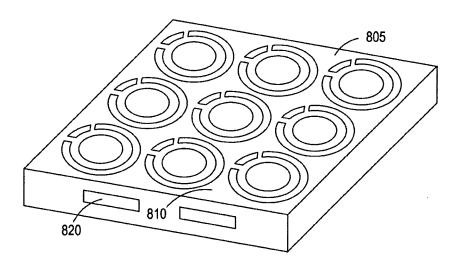


Figure 23



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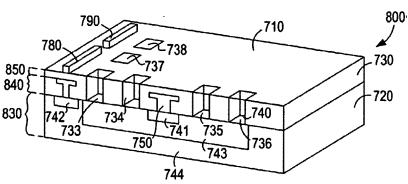


Figure 24

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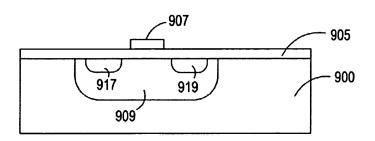


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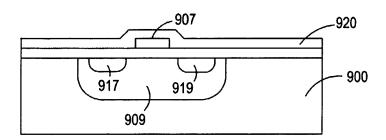


Figure 26 920 940 900 917 919 909

Figure 27

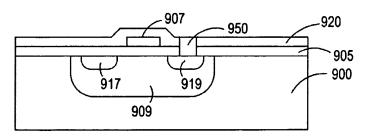


Figure 28



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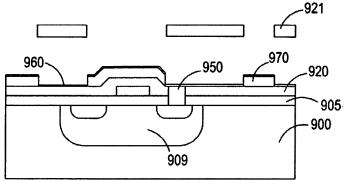


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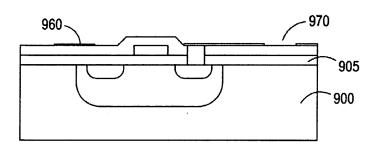


Figure 30



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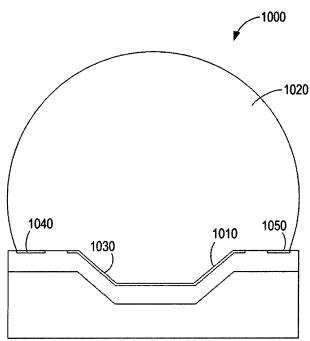


Figure 31



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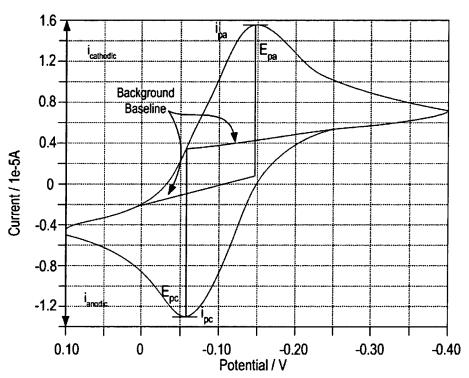
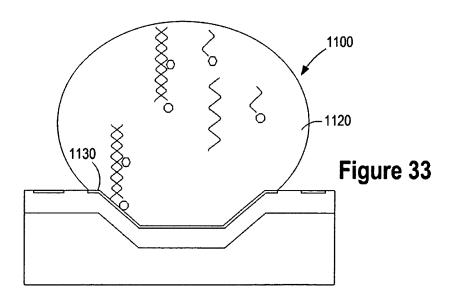


Figure 32



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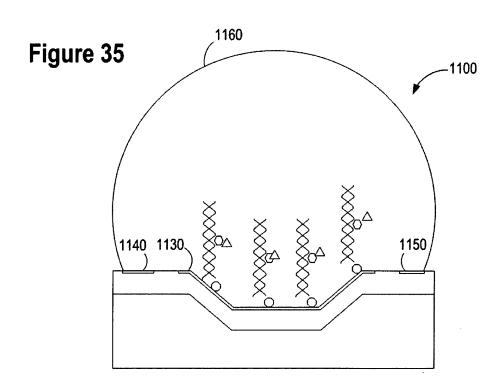
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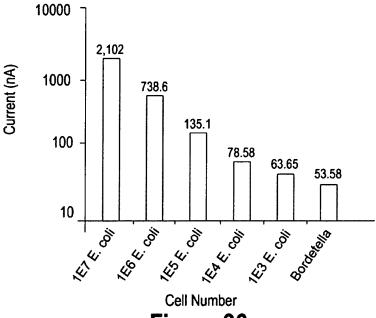
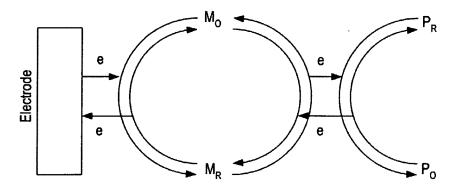


Figure 36



P_R: Reduced Peroxidase

P_O: Oxidized Peroxidase

Mo: Oxidized Mediator M_R: Reduced Peroxidase

Figure 37



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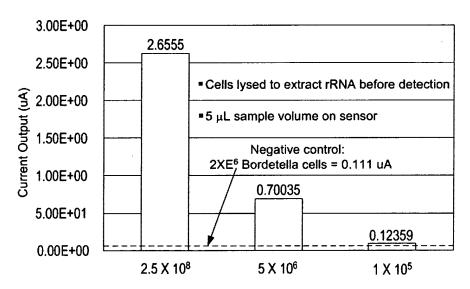
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4000 Str ptavidin on biotin-SH/Au SAM/Au(~3.0 ng/mm²)Streptavidin on bare Au 3000 (~2.4 ng/mm²) Response Units 1000RU~1.0 ng/mm² Figure 38 3500 2000 3000 2500 2000 -1500 -1000 1000 500 70 60 80 90 100 Ó 500 2000 1500 1000

Time (seconds)



E. coli cell number in urine sample

Figure 39



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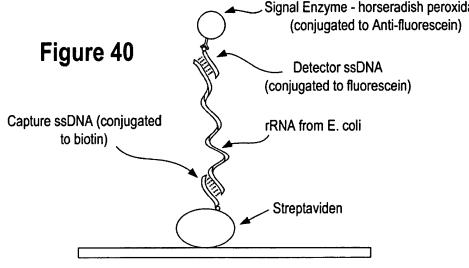
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Au working electrode

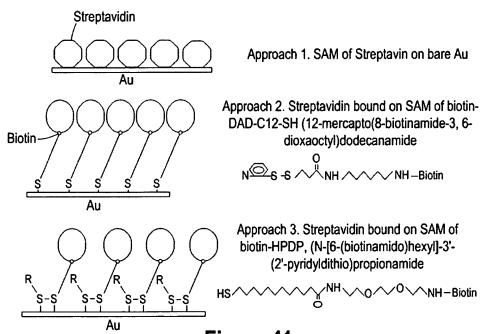


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Comparison of various reagents for the desorption of streptavidin from surface as determined by surface plasmon resonance

Treatment Condition	Streptavidin on Bare Au ~2400 RU deposited Loss in Signal (RU)		Streptavidin on biotin-DAD-C12-SH/Au ~3000 RU deposited Loss in Signal (RU)		Streptavidin on biotin-HPDP/Au ~1700 RU deposited Loss in Signal (RU)	
1.0 M KCI	0	0	0	0	0	, 0
8 M Urea	280(12%)	370(15%)	790(26%)	1050(35%)	360(21%)	300(18%)
0.5% SDS	40(2%)	150(6%)	390(13%)	230(8%)	330(19%)	690(40%)
0.1 M HCI	0	0	0	0	0	0
0.1 NaOH	400(17%)	550(23%)	630(21%)	690(23%)	400(24%)	200(12%)
40% Formamide	0	0	0	0	0	0

Figure 42

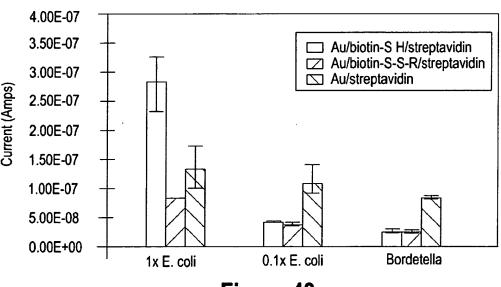


Figure 43



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10000.0 2,102 1000.0 738.6 135.1 100.0 7<u>8.5</u>8 63.65 53.58 10.0

Figure 44

Number of Cells